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MB: Keep me informed of the issue.
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10/26/92

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

Stevens T. Mason Building, P.O. Box 30028, Lansing, MI 48909

ROLAND HARMES, Director

October 26, 1992

Ms Mary Beth Novy (HSRW-6J)
US EPA Region 5
77 West Jackson St.
Chicago, IL. 60604

Dear Ms. Novy:

Subject: Work Plan for Magnetometer Survey, Received October 14, 1992 for the Albion-Sheridan Landfill Superfund Site, Calhoun County, Michigan.

Attached, please find comments generated by our technical staff following their review of the above listed document.

The comments indicate that the work plan does not adequately address the needs of the site. MDNR is discussing the possibility of pursuing this matter through the Dispute Resolution Process and we are exploring the possibility of funding additional magnetometer work with state funds through our Geological Services Section. I will keep you posted as the situation develops.

If you have any questions, please call me.

Sincerely,

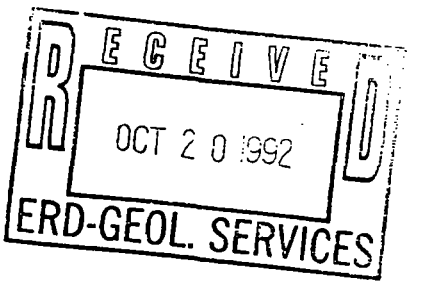
Gene L. Hall
Superfund Section
Environmental Response Division
517-2373-6808

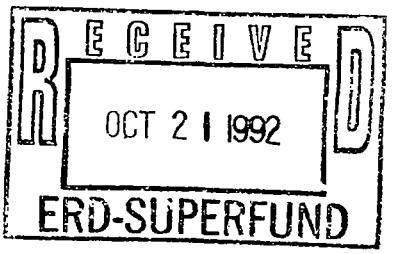
cc: Ms. Claudia Kerbawy, MDNR
Mr. Robert Delaney, MDNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

October 20, 1992





TO: Robert Delaney, Geologist
Geological Services Section
Environmental Response Division

FROM: Chris Austin, Geologist
Geological Services Section
Environmental Response Division

SUBJECT: Albion/Sheridan Landfill
Calhoun County, Michigan

This memo summarizes your October 19, 1992, request to the Geological Services Section to evaluate the results of an EM-31 survey and the feasibility of a magnetometer/gradiometer survey at the Albion/Sheridan Landfill. The purpose of the EPA's geophysical survey was to define the landfill boundaries and provide a geophysical assessment of drum locations within the refuse. My conclusions follow:

The Albion/Sheridan Landfill is approximately 30 acres and about 40-50 feet thick. A work plan submitted by the EPA on October 14, 1992, summarized the results of the EM-31 study. Figure 1 showed the EM-31 traverse lines and limits of landfill data based on the EM-31 data. Figure 1 fails to fully define the northwestern, southern, and east-central boundaries of the landfill. It is recommended that "where possible" additional traverse lines be extended in those areas and additional EM work be conducted.

Figures 2 and 3 showed the results of the Quadrature phase and In-phase data from the EM-31 data. Both maps identified isolated areas of high electromagnetic conductivity and strong metal responses. The EM-31 is very limited on its maximum depth of investigation. The EM-31 operating in the in-phase (metal) mode has a depth of investigation of 10-12 feet, while operating in the quadrature phase (conductivity) mode it is 18-20 feet.

The EPA work plan proposes "if time permits" to select only four areas from the EM-31 study for investigation with a magnetometer/gradiometer. The EPA must have recognized that using a shallow investigating method (maximum 12-20 feet "depending on mode of operation") to select follow-up areas of study is inappropriate, especially when the landfill is approximately 40-50 feet thick. The possibility of additional metallic objects lying beneath the effective range of the EM-31 is possible and needs addressing.

A magnetometer/gradiometer study should be conducted at the Albion/Sheridan Landfill. However, the area of study should not be isolated to just four areas. The area of study should incorporate the completed fill boundaries of the landfill. This will allow for a more accurate assessment of drum locations to be made.

If the magnetometer/gradiometer is set-up and operated properly, depths of 50 feet can be investigated. The Superfund investigation at Metamora Landfill illustrates how an accurate assessment of not only drum locations but drum numbers can be made. Because the magnetometer will detect increases or anomalies in the earth's magnetic field, it is used to locate buried metal objects (i.e. 55-gallon steel drums, ferrous containers, iron pipes, and iron tanks). By collecting field readings and contouring the data, distinct anomalies from magnetic highs can be located.

If you have any questions, call me at 373-0907.

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Enclosures

cc: W. Iversen
R. Noyce